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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,085	06/20/2003	Mukesh K. Jain	FA/254	7055

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EXAMINER

MATZEK, MATTHEW D

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/601,085

Applicant(s)

JAIN ET AL.

Examiner

Matthew D. Matzek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/3/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1-65 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-51 of copending Application No. 10/818,214. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are obvious variants of each other.
2. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.
3. Claims 1, 4, and 8-14 are rejected as claim 1 of the applied application discloses a fabric laminate capable of moisture vapor comprising a layer of apparel fabric laminated to a layer comprising at least a sulfonated aromatic polymer wherein the sulfonated aromatic polymer has a sulfonic acid equivalent weight of about 400-1000.
4. Claim 2 is rejected as claim 15 of the applied application discloses the fabric laminate of claim 1 wherein the fabric laminate is formed as an article of apparel or enclosure.

5. Claim 3 is rejected as claim 16 of the applied application recites the fabric laminate of claim 1, wherein the fabric Laminate is an article of apparel selected from outerwear, underwear, jackets, pants, gloves, hoods and foot wear.
6. Claim 5 is rejected as claim 4 of the applied application teaches the fabric laminate of claim 1, comprising at least two layers of apparel fabric.
7. Claim 6 is rejected as claim 23 of the applied application discloses a fabric laminate wherein at least one layer of apparel fabric is selected from knit, woven or non-woven apparel fabrics comprising fibers of polymers selected from poly(aliphatic amide), poly(aromatic amide), polyester, polyolefin, wool, cellulose based fibers such as cotton, rayon, linen, cellulose acetate, and other modified cellulose, polyurethane, acrylic, modacrylic, and a blend thereof.
8. Claim 7 is rejected as claim 17 of the applied application teaches the fabric laminate of claim 1, wherein the moisture vapor transmission rate is at least 600 g/m²/day.
9. Claim 15 is rejected as claim 5 of applied application discloses the fabric laminate of claim 1 wherein the fabric laminate is formed as an article of apparel or enclosure.
10. Claim 16 is rejected as claim 7 of the applied application teaches the fabric laminate of claim 1, wherein at least a portion of the aromatic groups are linked by one or more linkages comprising ketone, sulfone, ether, sulfide, amide, imide, urethane, ester, substituted or unsubstituted, saturated or unsaturated C₁₋₅ alkylene, substituted or unsubstituted phosphine, and phosphine oxide groups.
11. Claim 17 is rejected as claim 6 of the applied application recites the fabric laminate of claim 1, wherein at least a portion of the aromatic groups have substitutions selected from C₁₋₈

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alkyl and haloalkyl, aryl, ketone, hydroxyl, halogen, amine, cyanide, nitrile, sulfide, carbonyl, C₁₋₈ ester and C₁₋₈ alkoxy groups.

12. Claim 18 is rejected as claim 9 of the applied application discloses the fabric laminate of claim 1, wherein the sulfonated aromatic polymer is crosslinked.

13. Claim 19 is rejected as claim 10 of the applied application teaches the fabric laminate of claim 1, wherein the sulfonated aromatic polymer is ionically crosslinked.

14. Claim 20 is rejected as claim 11 of the applied application teaches the fabric laminate of claim 1, wherein the layer comprising the sulfonated aromatic polymer further comprises at least one additional component.

15. Claims 21 and 23 are rejected as claim 12 of the applied application discloses the fabric laminate of claim 1, wherein the layer comprising the sulfonated aromatic polymer comprises a composite of the sulfonated aromatic polymer and at least one substrate.

16. Claim 22 is rejected as claim 25 of the applied application teaches a fabric Laminate wherein at least one substrate is expanded polytetrafluoroethylene.

17. Claims 24-29, 31, 35-36, 40 are rejected as claim 18 of the applied application discloses a fabric laminate capable of transmitting moisture vapor comprising at least one layer of apparel fabric Laminated to a composite comprising at least one substrate and a sulfonated aromatic polymer, the sulfonated aromatic polymer comprising at least one repeating aromatic group selected from 5, 6, or 7 membered single or fused rings having 0, 1, 2, 3, or 4 heteroatoms selected from N, O, or S, and at least a portion of the aromatic groups having at least one pendant group comprising sulfonic acid, or its salt, wherein the sulfonated aromatic polymer has a sulfonic acid equivalent weight of 400 - 1000 (IEC: 1.0- 2.5 meq/g).

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18. Claim 30 is rejected as claim 34 of the applied application teaches the fabric Laminate of claim 18, wherein the fabric Laminate is an article of apparel selected from outer wear, under wear, jackets, pants, gloves, foot wear, and hoods.

19. Claim 32 is rejected as claim 19 of the applied application recites the fabric laminate of claim 18 wherein at least a portion of the aromatic groups are linked by one or more linkages comprising ketone, sulfone, ether, sulfide, amide, imide, urethane, ester, substituted or unsubstituted saturated or unsaturated C₁₋₅ alkylene, substituted or unsubstituted phosphine, and phosphine oxide groups.

20. Claim 33 is rejected as claim 20 of the applied application teaches the fabric Laminate of claim 18 wherein at least a portion of the aromatic groups are linked by linkages selected from ketone, sulfone, imide and ether.

21. Claim 34 is rejected as claim 22 of the applied application recites the fabric laminate of claim 18 wherein at least a portion of the aromatic groups contain substitutions selected from C₁₋₈ alkyl and haloalkyl, aryl, ketone, hydroxyl, halogen, amine, cyanide, nitrile, sulfide, carbonyl, C₁₋₈ ester and C₁₋₈ alkoxyl groups.

22. Claim 37 is rejected as claim 24 of the applied application teaches the fabric Laminate of claim 18, wherein at least one substrate is porous or microporous.

23. Claim 38 is rejected as claim 25 of the applied application discloses the fabric laminate of claim 18, wherein the at least one substrate is expanded polytetrafluoroethylene.

24. Claim 39 is rejected as claim 30 of the applied application teaches a fabric laminate comprising at least one additional expanded polytetrafluoroethylene substrate and wherein at

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least a portion of the sulfonated aromatic polymer resides partially or fully within both expanded polytetrafluoroethylene substrates.

25. Claims 41, 45-49, and 52-65 are rejected as claim 46 of the applied application discloses an article of apparel having a fabric Laminate capable of transmitting moisture vapor comprising at least one layer of apparel fabric Laminated to a composite comprising at least one substrate and a sulfonated aromatic polymer, wherein the sulfonated aromatic polymer comprises at least one repeating aromatic group selected from 5, 6, or 7 membered single or fused rings having 0, 1, 2, 3, or 4 heteroatoms selected from N, O, or S, and at least a portion of the aromatic groups having at least one pendant group comprising sulfonic acid, or its salt, wherein the polymer has a sulfonic acid equivalent weight of about 400-1000 (IEC: 1.0 - 2.5 meq/g).

26. Claims 42 and 50 are rejected as claim 50 of the applied application disclose the article of apparel of claim 46, comprising at least two layers of apparel fabric.

27. Claims 50 and 51 are rejected as claim 49 of the applied application teach the article of apparel of claim 46, wherein at least one substrate is expanded polytetrafluoroethylene.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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28. Claims 1-44, and 46-65 are rejected under 35 U.S.C. 103(a) as obvious over Maples (US Patent 6,395,383) in view of Baker et al. (US Patent 4,943,475) and in further view of Ozcayir et al. (US Patent 5,618,334).

29. Maples discloses a selectively permeable protective covering capable of transmitting high quantities of water vapor while also being capable of significantly restricting the passage of dangerous chemicals (Abstract). This invention is directed to use as a protective garment or associated accessories (Abstract). In an embodiment of this invention the chemical protective covering comprises two water vapor permeable open pore polytetrafluoroethylene (PTFE) substrates and a polyamine polymer with amine-acid moieties specifically involving H_2SO_4 (col. 4, lines 57-65). The third open pore substrate may also be made of polyethylene, polysulfone, polypropylene, polyamides, and the like (col. 7, lines 37-45). The acidic species of the polyamine polymer amine-acid moieties are preferably multiprotic and may include sulfuric and sulfurous acid (col. 9, lines 5-20). The acidic species may also be covalently bound within the polyamine polymer (col. 9, lines 12-16). The polyamine polymer will be made to form a selectively permeable sheet or layer, which in some embodiments, may be part of a composite sheet with at least one water vapor permeable substrate (col. 10, lines 12-15). A laminate construction of the applied invention is depicted in Figure 19.

30. Baker et al. disclose a multilayer fabric material consisting of a woven or non-woven fabric support, a microporous membrane layer and an ultrathin permselective surface coating, and optionally an intermediate sealing layer and a protective top layer (Abstract). The material is suitable for fabricating protective clothing for use in industrial and military hazardous chemical environments (Abstract). The microporous support membrane may comprise polysulfones,

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polyamides, or crosslinked polyimides (col. 6, lines 43-62). The invention of Baker et al. is silent as to the specific nature of the polysulfones, polyamides, or crosslinked polyimides to be used in the disclosed patent.

31. The invention of Ozcayir et al. teaches a gas separation membrane prepared from sulfonated polyimides (Abstract). The disclosed chemical specie of the applied patent contains aromatic radicals and aromatic rings in the polyimide backbone containing sulfonic acid radicals (col. 2, lines 15-25). The sulfonic acid radical is defined as a sulfonic acid group, salified sulfonic acid group, or sulfonic acid ester group (col. 2, lines 25-30). This applied patent is silent as to the sulfonic acid equivalent weight, but it is reasonable to assume that the invention of Ozcayir et al. has a sulfonic acid equivalent weight of about 200-1000 or 400-800, or it would have been obvious to have selected the instantly claimed species in order to arrive at a material having the desired molecular weight for the sulfonic acid specie.

32. Baker et al. disclose that crosslinked-polyimides may be used interchangeably with polyamides for use in the creation of microporous membrane layers in protective articles. Therefore, it would have been obvious to one of ordinary skill in the art to have made the invention of Maples with the sulfonic acid polyimides of Ozcayir et al. motivated by the successful creation of a selectively permeable protective covering capable of transmitting high quantities of water vapor while also being capable of significantly restricting the passage of noxious or harmful chemicals.

33. The applied patents are silent as to their water vapor transmission rate and permeability to bis-2-chloroethyl sulfide or pinacolyl methylphosphono fluoridate over a 20-hour period. Claims 7-14, 24-26, 41, 47, 53, 57 and 65 are rejected as the compositional limitations of the instant

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application have been met and it is reasonable to assume that the invention of Maples inherently possesses these properties due to the fact that the same materials are found both in Maples and in the instant claims, or in the alternative, it would have been obvious to have selected the materials, permeabilities, etc., in Maples in order to arrive at a material having the desired specie specific permeability over the specified period of time.

34. Claims 2-4, 30-31, 46, and 54-55 are rejected as the invention of the '383 patent may be used as blankets, tents, sleeping bags, sacks, footwear, gloves, garments and the like (col. 6, lines 29-32).

35. Claims 5, 27, and 42 are rejected as the '383 invention allows for the incorporation of additional layers to the protective covering article including various textiles, felts, films, membranes, scrim, leathers, and the like (col. 12, lines 4-10).

36. Claims 6, 29, and 43 are rejected as the fabric laminate may comprise layers of polyamides, cellulose, polyester, and polyurethane ('383 col.7, lines 37-62). Figure 19 of the '383 patent demonstrates the use of multiple layers of fabric (col. 12, lines 24-28).

37. Claim 18 is rejected as the polyimide polymer will preferably be cross-linked ('475 col. 6, lines 60-65). Cross-linking, creating insoluble polymer networks, can be achieved by any of various means known in the art. One route is to cross-link via the amine functionalities within the polyimide polymer. As such, suitable cross-linking agents may be selected from, for example, polyepoxides, polybasic esters, aldehydes, and alkylhalides. In a preferred embodiment, the polyimides are cross-linked at least in part by epoxide linkages (' 383 col. 10, lines 3-11).

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38. The '383 patent is silent as to the nature of the cross-linking of the sulfonated aromatic polymer, but does state that the cross-linking may be achieved by any of various means known in the art (col. 10, lines 3-6). The Examiner takes the position that ionically crosslinking polymers is known in the art and as such the applied patent rejects instant claim 19.

39. Claims 20-21, and 36 are rejected as the polyimide polymer will be made to form a selectively permeable sheet or layer, which in some embodiments, may be part of a composite sheet with at least one water vapor permeable substrate ('383 col. 10, lines 12-15).

40. The '383 patent teaches the polyimide polymer composite sheet with open pore expanded PTFE substrates ('383 claim 10). Claim 22 is rejected.

41. Claims 28, 44, and 64 are rejected as laminate arrangements may consist of arrangements of polyimide layers combined with one or more additional fabric layers ('383 col. 12, lines 44-48).

42. Claims 37-39, 49-50, and 60-63 are rejected as the polyimide polymer may be made to imbibe into a substrate or substrates such that the polymer fills the voids within a substrate either wholly or partially ('383 col. 11, lines 55-63). The applied patent teaches the polyimide polymer composite sheet with open pore expanded PTFE substrates ('383 claim 10).

43. It is envisioned that multiple substrates may be used ('383 col. 11, line 67-col. 3, line 3). Claims 40 and 51 are rejected.

Claim Rejections - 35 USC § 103

44. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maples in view of Baker et al. in view of Ozcayir et al. and in further view of Baurmeister (US Patent

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5,743,775). The inventions of Maples, Baker et al., and Ozcayir et al have been previously disclosed.

45. Baurmeister teaches a laminate that restrains organic vapors, aerosols, and biological agents, where at least one layer is implemented as a barrier layer, wherein the barrier layer is implemented from cellulose-based polymers over its entire surface and the laminate is water-vapor permeable (Abstract). The invention of Baurmeister may be used in clothing articles, military protective clothing, tents, and emergency shelters (Abstract). The patented invention can also include a carrier layer (col. 3, lines 10-15). The membrane can also be a microporous filtration membrane whose pores are at least in part filled with the cellulose-based polymers. Typical examples of microporous filtration membranes include polysulfones and poly(ethersulfones) (col. 3, lines 30-45). In one embodiment of the invention it is possible for the laminate to contain a separation layer, which is waterproof and water-vapor permeable (col. 5, lines 3-6). In a particular embodiment a layer of the laminate of the invention is a woven fabric layer (col. 6, lines 47-50).

46. It would have been obvious to one skilled in the art at the time of the invention of Maples to have made the selectively permeable protective covering of Maples waterproof and water-vapor permeable. The skilled artisan would have been motivated to make the invention of Maples waterproof due to the nature of the directed uses of the invention of Maples, which include blankets, tents, sleeping bags, sacks, footwear, gloves, garments and the like (col. 6, lines 29-32).

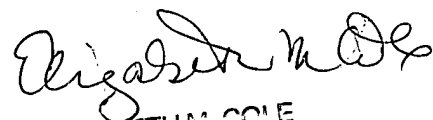
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Matzek whose telephone number is (571) 272-2423. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mdm


ELIZABETH M. COLE
PRINCIPAL EXAMINER